

# Service Manual

Cassette Deck

## RS-M65

FG Servo Controlled Direct-Drive Flat Type Cassette Deck

(Black Face)  
(Silver Face)

This is the Service Manual for the following areas.

- ☐.....For All European areas except United Kingdom.
- ☐.....For United Kingdom.
- ☐.....For Asia, Latin America, Middle East and Africa areas.
- ☐.....For Australia.
- ☐.....For PX.

### RS-M85 MECHANISM SERIES

#### Specifications

Power requirements: AC; 110/125/220/240V, 50-60Hz  
(not necessary For conversion)  
Preset power voltage: 220V for Europe except England, 240V for England and Australia

Power consumption: 30W (for All European areas and Australia)  
27W (for Asia, Latin America, Middle East, Africa areas PX)

Motors: 2-motor system  
Brushless FG servo controlled direct-drive motor for capstan drive  
1-DC coreless motor for reel-table drive

Track system: 4-track 2-channel stereo recording and playback

Tape speed: 4.8cm/s (1-7/8ips)

Wow and flutter: 0.035% (WRMS),  $\pm 0.10\%$  (DIN)

Frequency response: CrO<sub>2</sub>/Fe-Cr tape; 20 ~ 18,000Hz  
30 ~ 18,000Hz (DIN)  
30 ~ 16,000Hz  $\pm 3$ dB  
Normal tape; 20 ~ 16,000Hz  
30 ~ 16,000Hz (DIN)  
30 ~ 14,000Hz  $\pm 3$ dB

Signal-to-noise ratio: Dolby\* NR in; 69dB above 5kHz)  
Dolby NR out; 59dB  
(signal level = max. recording level, Fe-Cr/CrO<sub>2</sub> type tape)

Fast forward and  
rewind time: Approx. 80 seconds with C-60 cassette tape

Inputs: MIC; sensitivity 0.25mV, input impedance 47K $\Omega$   
applicable microphone impedance 400 $\Omega$  ~ 10K $\Omega$

Output: LINE; sensitivity 60mV, input impedance 56K $\Omega$   
LINE; output level 700mV, load impedance 22K $\Omega$  over  
HEADPHONE; output level 75mV, load impedance 8 $\Omega$

Rec/pb connection: 5P DIN type; input sensitivity 0.25mV, impedance 6.4K $\Omega$  output level 700mV, impedance 1.5K $\Omega$

Heads: 2-head system  
1-SX (Sendust Extra) head for record/playback  
1-double-gap ferrite head for erasure

Bias frequency: 85kHz

Dimensions: 43cm(W)  $\times$  9.7cm(H)  $\times$  34.7cm(D)  
[16-7/8"(W)  $\times$  3-7/8"(H)  $\times$  13-5/8"(D)]

Weight: 7.1kg (15lbs 11oz)

Specifications are subject to change without notice.

\* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

# Technics

Matsushita Electric Trading Co., Ltd.  
P.O. Box 288, Central Osaka Japan

# LOCATION OF CONTROLS AND COMPONENTS

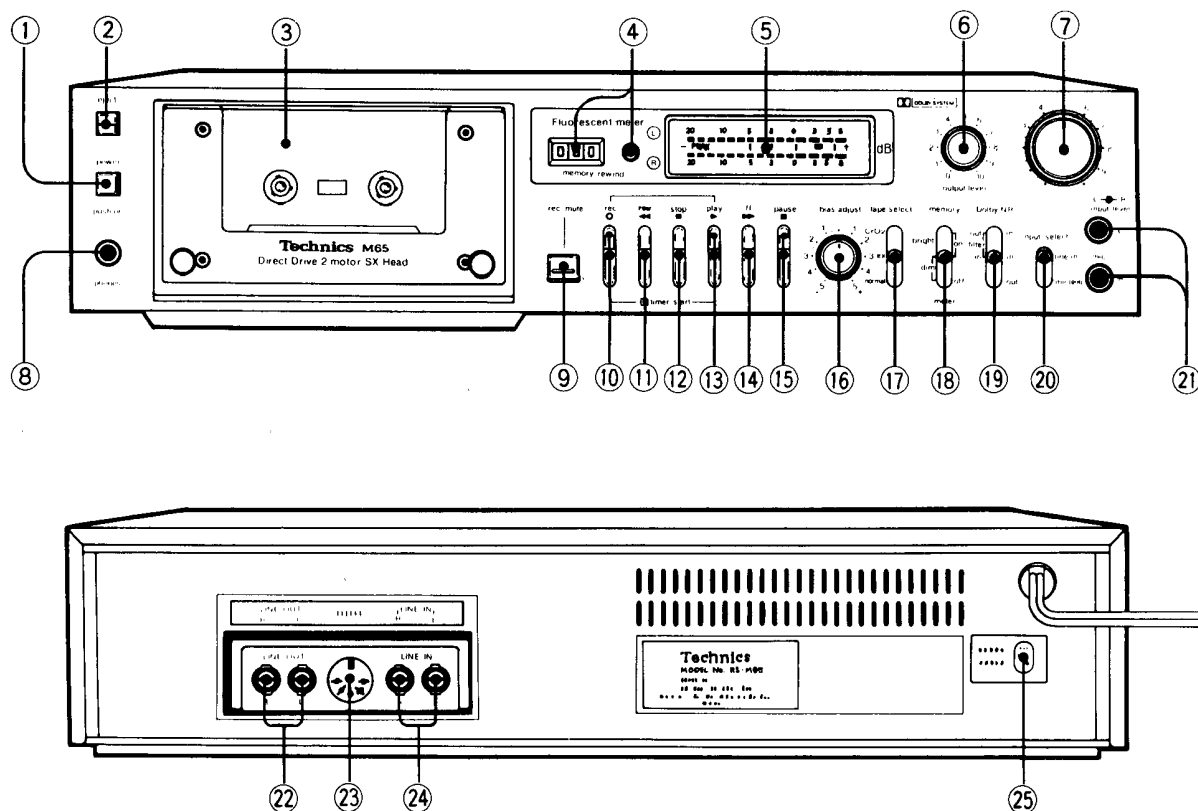


Fig. 1

- |   |   |
|---|---|
| ① Power switch                                  | ⑭ Fast-forward button                     |
| ② Eject button                                  | ⑮ Pause button with pause indication lamp |
| ③ Cassette holder                               | ⑯ Bias-adjustment control                 |
| ④ Tape counter and reset button                 | ⑰ Tape selector                           |
| ⑤ FL (Fluorescent Level) Meters                 | ⑱ Memory/meter-brightness switch          |
| ⑥ Output level control                          | ⑲ Dolby noise-reduction switch            |
| ⑦ Input level controls                          | ⑳ Input selector                          |
| ⑧ Headphones jack                               | ㉑ Microphone jacks                        |
| ⑨ Record-muting switch                          | ㉒ Line output jacks                       |
| ⑩ Record button with record indication lamp     | ㉓ Record/playback connection socket       |
| ⑪ Rewind button                                 | ㉔ Line input jacks                        |
| ⑫ Stop button                                   | ㉕ Voltage selector                        |
| ⑬ Playback button with playback indication lamp |   |

# DISASSEMBLY INSTRUCTIONS

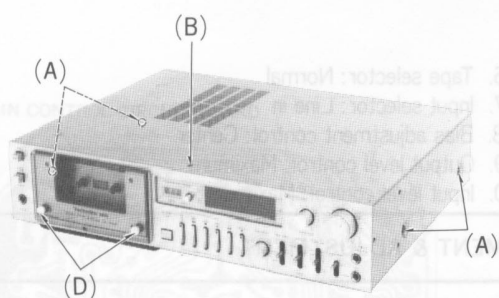


Fig. 2

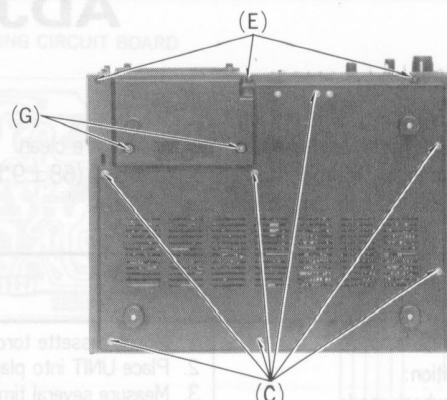


Fig. 3

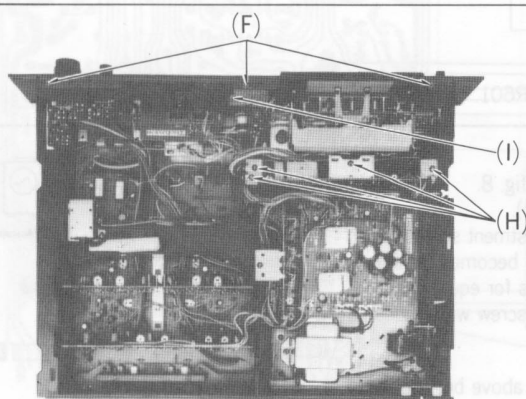


Fig. 4

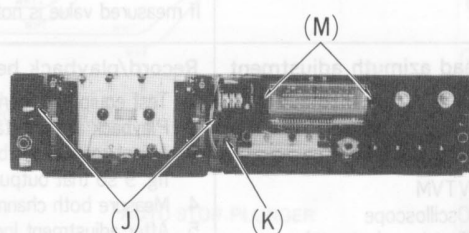


Fig. 5

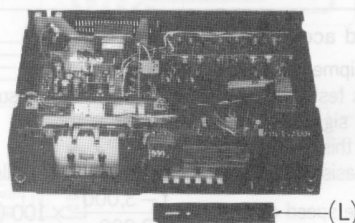


Fig. 6

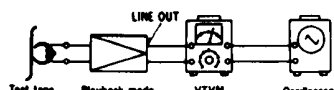
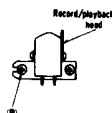

Procedure	To remove —	Remove —	Shown in fig. —
1	Case cover	• 4 screws .....(A) • 1 screw .....(B)	2 2
2	Bottom cover	• 7 red screws .....(C)	3
3	Front panel	• 2 cassette lid holding screws .....(D)※ • 3 screws .....(E) • 3 red screws .....(F)	2 3 4
4	Mechanism	• 2 red screws .....(G) • 4 red screws .....(H) • Red screw .....(I) • 2 red screws .....(J) • Metal screw .....(K)	3 4 4 5 5
5	FL level meter	• Meter cover .....(L) • 2 meter holders .....(M)	6 5

※The head azimuth can be adjusted by removing the cassette lid.

# MEASUREMENT AND ADJUSTMENT METHODS

## NOTE:

1. Make sure heads are clean.
2. Make sure capstan and pressure roller are clean.
3. Judgeable room temperature:  $20 \pm 5^\circ\text{C}$  ( $68 \pm 9^\circ\text{F}$ )
4. Meter selector: Peak, dim
5. Dolby NR switch: OUT
6. Tape selector: Normal
7. Input selector: Line in
8. Bias adjustment control: Center
9. Output level control: Maximum
10. Input level control: Maximum

ITEM	MEASUREMENT & ADJUSTMENT
<b>Takeup tension</b> Condition: • Playback mode Equipment: • Cassette torque meter ... QZZSRKCT	<ol style="list-style-type: none"> <li>1. Mount cassette torque meter on UNIT.</li> <li>2. Place UNIT into playback mode and read takeup torque.</li> <li>3. Measure several times and determine the mean value.</li> </ol> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <b>Standard value: <math>45 \pm 15 \text{ gr-cm}</math></b> </div> <p><b>Adjustment method</b>            If measured value is not standard, adjust VR601.</p>
<b>Head azimuth adjustment</b> Condition: • Playback mode Equipment: • VTVM • Oscilloscope • Test tape (azimuth) ... QZZCFM • Tape path viewer ... QZZCRD	<p><b>Record/playback head adjustment</b></p> <ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 8.</li> <li>2. Playback azimuth tape (QZZCFM 8kHz).</li> <li>3. Adjust record/playback head angle adjustment screw (B) in fig. 9 so that output level at LINE OUT becomes maximum.</li> <li>4. Measure both channels, and adjust levels for equal output.</li> <li>5. After adjustment lock head adjustment screw with lacquer.</li> </ol> <p><b>Erase head adjustment</b></p> <ol style="list-style-type: none"> <li>1. Test equipment connection is the same above but use the tape path viewer (QZZCRD) instead of test tape (QZZCFM).</li> <li>2. Playback this tape.</li> <li>3. Adjust screw (C) shown in fig. 10 so that the tape may not get curled or malformed by tape guide of the erase head.</li> <li>4. After adjustment, lock head adjust screw with lacquer.</li> </ol> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><b>Fig. 8</b></p> </div> <div style="text-align: center;">  <p><b>Fig. 9</b></p> </div> <div style="text-align: center;">  <p><b>Fig. 10</b></p> </div> </div>
<b>Tape speed</b> Condition: • Playback mode Equipment: • Digital electronic counter • Test tape ... QZZCWAT	<p><b>Tape speed accuracy</b></p> <ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 11.</li> <li>2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter.</li> <li>3. Measure this frequency.</li> <li>4. On the basis of 3,000 Hz, determine value by following formula:  <math display="block">\text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100 (\%)</math>           where, f = measured value</li> <li>5. Take measurement at middle section of tape.</li> </ol> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <b>Standard value: <math>\pm 0.4\%</math></b> </div> <p><b>Adjustment method</b></p> <ol style="list-style-type: none"> <li>1. Playback the test tape (middle).</li> <li>2. Adjust tape speed adjustment VR701 so that frequency becomes 3,000 Hz.</li> </ol> <p><b>Tape speed fluctuation</b>            Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows:  <math display="block">\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3,000} \times 100 (\%)</math> <math>f_1 = \text{maximum value}, f_2 = \text{minimum value}</math></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <b>Standard value: Less than 0.3%</b> </div>

ITEM	MEASUREMENT & ADJUSTMENT
<b>Capstan motor circuit adjustment</b>	<p><b>Standard DC power supply voltage adjustment</b></p> <ol style="list-style-type: none"> <li>1. Measure the DC voltage between ⑤ terminal of IC701 and ground as shown in fig. 12.</li> </ol> <div data-bbox="533 383 860 427" style="border: 1px solid black; padding: 2px; text-align: center;"> <b>Standard value: <math>11 \pm 0.05V</math></b> </div> <ol style="list-style-type: none"> <li>2. If measured voltage is not within standard, adjust VR702.</li> </ol> <div data-bbox="1150 282 1334 439" style="text-align: center;"> </div> <p style="text-align: center;"><b>Fig. 12</b></p>
<p><b>Playback frequency response</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Playback mode</li> <li>• Output level control ... MAX</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• Oscilloscope</li> <li>• Test tape ... QZZCFM</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is as same as "Head azimuth adjustment" but use the test tape (QZZCFM) instead of head azimuth tape (See fig. 8).</li> <li>2. Place UNIT into playback mode.</li> <li>3. Playback the frequency response test tape (QZZCFM).</li> <li>4. Measure output level at 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz, and compare each output level with the standard frequency 315Hz, at LINE OUT.</li> <li>5. Make measurement for both channels.</li> <li>6. Make sure that the measured value is within the range specified in the frequency response chart.</li> <li>7. If measured value is not in standard, adjust VR1 (L-CH), VR2 (R-CH) (See fig. 24).</li> </ol> <div data-bbox="895 521 1406 719" style="text-align: center;"> <p><b>Playback frequency response chart</b></p> </div> <p style="text-align: center;"><b>Fig. 13</b></p>
<p><b>Playback gain</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Playback mode</li> <li>• Output level control ... MAX</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• Oscilloscope</li> <li>• Test tape ... QZZCFM</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 8.</li> <li>2. Playback standard recording level portion on test tape (QZZCFM 315Hz), and using VTVM measure the output level at LINE OUT jack.</li> <li>3. Make measurement for both channels.</li> </ol> <div data-bbox="533 1010 884 1055" style="border: 1px solid black; padding: 2px; text-align: center;"> <b>Standard value: <math>0.66 \pm 0.05V</math></b> </div>
<p><b>Playback S/N ratio</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Playback mode</li> <li>• Output level control ... MAX</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• Oscilloscope</li> <li>• Test tape ... QZZCFM</li> <li>• Empty cassette</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 8.</li> <li>2. Playback standard recording level test tape (QZZCFM 315Hz) and read output level on VTVM. Refer to "Playback gain adjustment".</li> <li>3. Place empty cassette (which has been cut) and playback again.</li> <li>4. Measure noise level at this time using VTVM, and determine ratio of this level to test tape output signal voltage (315Hz).</li> </ol> <div data-bbox="533 1290 943 1335" style="border: 1px solid black; padding: 2px; text-align: center;"> <b>Standard value: Greater than 47dB</b> </div>
<p><b>Bias leak</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Record mode</li> <li>• Input level control ... MAX</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• Oscilloscope</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 14.</li> <li>2. Place UNIT into record mode.</li> <li>3. Adjust trap coils L1 (L-CH), L2 (R-CH), so that measured value become minimum (See fig. 24).</li> <li>4. Make adjustment for both channels.</li> </ol> <div data-bbox="1102 1368 1422 1536" style="text-align: center;"> </div> <p style="text-align: center;"><b>Fig. 14</b></p>
<p><b>Bias current</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Record mode</li> <li>• Bias adjustment control ... Center</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• Oscilloscope</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 15.</li> <li>2. Place UNIT into record mode, and tape selector to normal position.</li> <li>3. Read voltage on VTVM and calculate bias current by following formula:</li> </ol> <div data-bbox="564 1715 959 1771" style="text-align: center;"> <math display="block">\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10\Omega}</math> </div> <div data-bbox="533 1783 900 1827" style="border: 1px solid black; padding: 2px; text-align: center;"> <b>Standard value: About 0.40mA</b> </div> <ol style="list-style-type: none"> <li>4. If measured value is not in standard, adjust L1 (L-CH), and L2 (R-CH).</li> <li>5. Then changing the tape selector to Fe-Cr position measure the bias current.</li> </ol> <div data-bbox="1078 1626 1406 1760" style="text-align: center;"> </div> <p style="text-align: center;"><b>Fig. 15</b></p>

ITEM	MEASUREMENT & ADJUSTMENT
	<p style="text-align: center;"><b>Standard value: About 0.48 mA</b></p> <p>6. Change the tape selector to CrO<sub>2</sub> position, measure the bias current.</p> <p style="text-align: center;"><b>Standard value: About 0.57 mA</b></p>
<p><b>Erase current</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>Record mode</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>VTVM</li> <li>Oscilloscope</li> <li>Resistor (1Ω)</li> </ul>	<ol style="list-style-type: none"> <li>Connect 1Ω resistor between ground side terminal of erase head ground lead wire removed (See fig. 16).</li> <li>Connect VTVM to both ends of 1Ω resistor.</li> <li>Place UNIT into record mode, and measure voltage across the 1Ω resistor.</li> <li>Determine erase current with the following formula:</li> </ol> $\text{Erase current (A)} = \frac{\text{Voltage across both ends of } 1\Omega}{1\Omega}$ <p style="text-align: center;"><b>Standard value: 60 ± 15 mA (bias selector ... low)</b></p>
<p><b>Overall gain</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>Record/playback mode</li> <li>Input level control ... MAX</li> <li>Standard input level: <ul style="list-style-type: none"> <li>MIC ..... -72 ± 3 dB</li> <li>LINE IN ... -24 ± 3 dB</li> <li>DIN ..... -36 ± 3 dB</li> </ul> </li> <li>Bias adjustment control ... Center</li> <li>Output level control ... MAX</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>AF oscillator</li> <li>Oscilloscope</li> <li>Test tape (reference blank tape)</li> <li>VTVM</li> <li>ATT</li> <li>QZZCRA for Normal</li> <li>QZZCRX for CrO<sub>2</sub></li> <li>QZZCRY for Fe-Cr</li> </ul>	<ol style="list-style-type: none"> <li>Test equipment connection is shown in fig. 18.</li> <li>Place UNIT into record mode.</li> <li>Supply 1kHz signal (-24 dB) from AF oscillator, through ATT to LINE IN.</li> <li>Adjust ATT until monitor level at LINE OUT becomes 0.66 V.</li> <li>Using test tape, make recording.</li> <li>Playback recorded tape, and measure the output level at LINE OUT on VTVM.</li> <li>If the measured value increases, connection points for R93, R94 (Fe-Cr) or R97, R98 (CrO<sub>2</sub>) should be shorted.</li> <li>If the measured value decreases, connection points for R91, R92 (Fe-Cr) or R95, R96 (CrO<sub>2</sub>) should be unsoldered.</li> </ol> <p style="text-align: center;"><b>Standard value: 0.66 ± 0.05 V (Normal position), 0.66 ± 1.5 dB (Fe-Cr position, CrO<sub>2</sub> position)</b></p>
<p><b>Fluorescent meter</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>Record mode</li> <li>Input level control ... MAX</li> <li>Output level control ... MAX</li> <li>Tape selectors ... Normal position</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>VTVM</li> <li>AF oscillator</li> <li>ATT</li> </ul>	<ol style="list-style-type: none"> <li>Test equipment connection is shown in fig. 18.</li> <li>Set the meter function selector to the "bright" position.</li> <li>Supply 1kHz signal (-24 dB) to the LINE IN jack, then press the record button.</li> <li>Adjust the ATT so that the output level at LINE OUT jack becomes 0.66 V (= standard input level).</li> <li>Adjustment at "0 dB": <ol style="list-style-type: none"> <li>Adjust VR301 (L-CH) and VR302 (R-CH) so that the Fluorescent meters show an illuminated indication up to "0 dB" when the input signal level is 0.9 dB higher than the standard input level.</li> <li>Then confirm that the Fluorescent meters show an illuminated indication up to "+1 dB" when the input signal level is 1 dB higher than the standard input level.</li> </ol> </li> <li>Adjustment at "-20 dB": <ol style="list-style-type: none"> <li>Adjust VR303 (L-CH) and VR304 (R-CH) so that the Fluorescent meters show an illuminated indication up to "-20 dB" when the input signal level is 15.1 dB lower than the standard input level.</li> <li>Then confirm that the Fluorescent meters show an illuminated indication up to "-15 dB" when the input signal level is 15 dB lower than the standard input level.</li> </ol> </li> <li>Repeat twice between steps 3 and 6 above.</li> </ol>

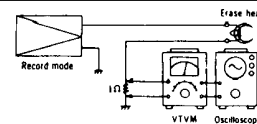


Fig. 16

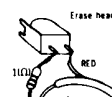


Fig. 17

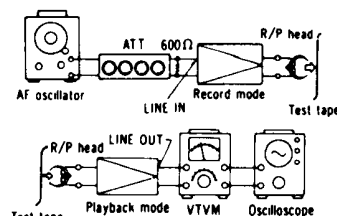


Fig. 18

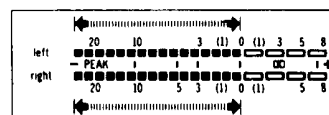


Fig. 19

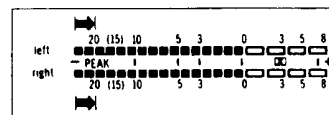


Fig. 20

ITEM	MEASUREMENT & ADJUSTMENT
<p><b>Overall S/N ratio</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>* Record/playback mode</li> <li>* Input level control ... MAX</li> <li>* Erase the tape with a bulk tape eraser.</li> <li>* Output level control ... MAX</li> <li>* Bias adjustment control ... Center</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>* VTVM     * AF oscillator</li> <li>* ATT     * Oscilloscope</li> <li>* Test tape (reference blank tape) ... QZZCRA</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 18.</li> <li>2. Supply 1kHz signal to LINE IN and adjust ATT so that output level at LINE OUT indicates 0.66V.</li> <li>3. Make recording.</li> <li>4. Make another recording without supplying signal (disconnect input plug to LINE IN).</li> <li>5. Rewind to recorded part and playback.</li> <li>6. Measure output signal level and no signal level (noise), and determine the ratio in decibels (dB).</li> <li>7. The value is difference between "Playback S/N and overall S/N", but for decibel calculation refer to "Playback S/N ratio".</li> </ol> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Standard value: Greater than 45dB (without NAB filter)</b></p> </div>

## ADJUSTMENT PARTS LOCATION

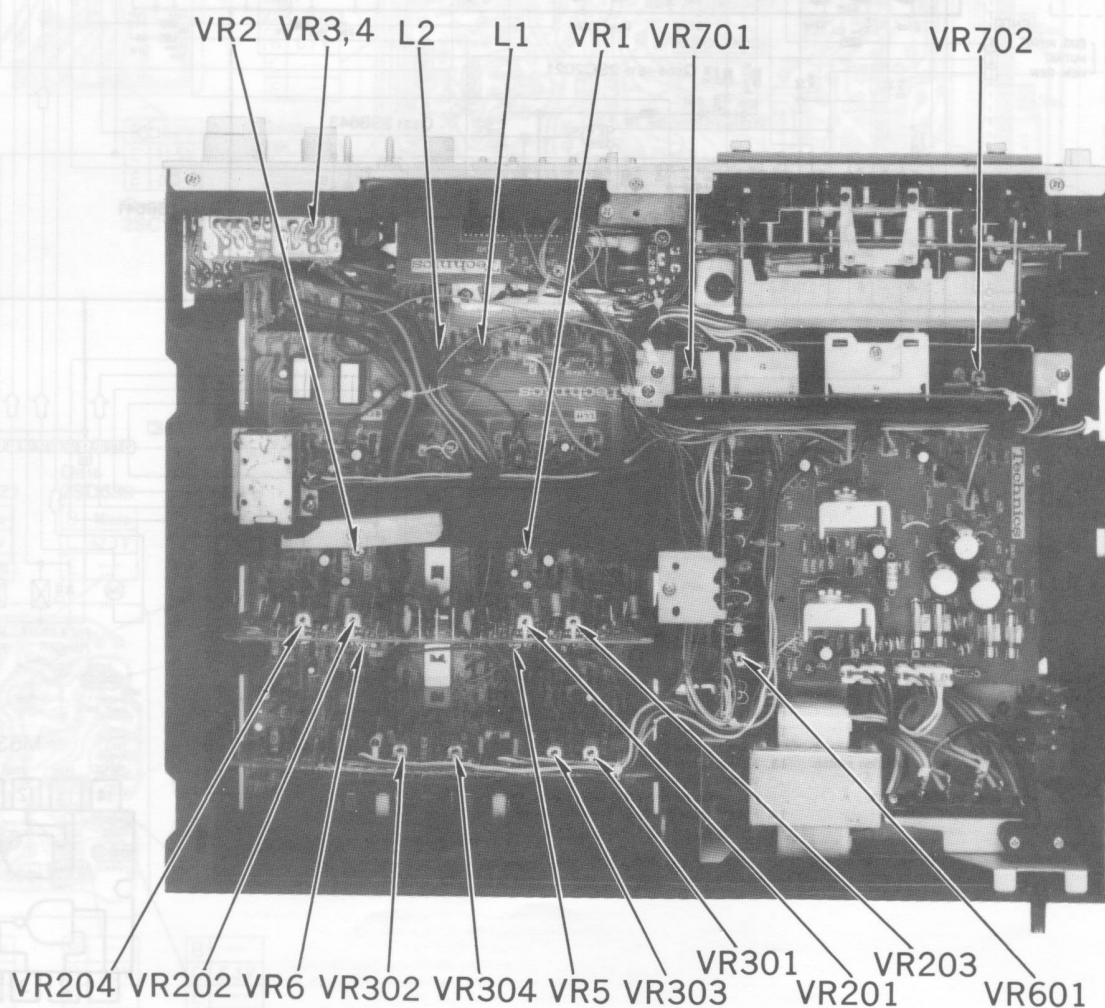
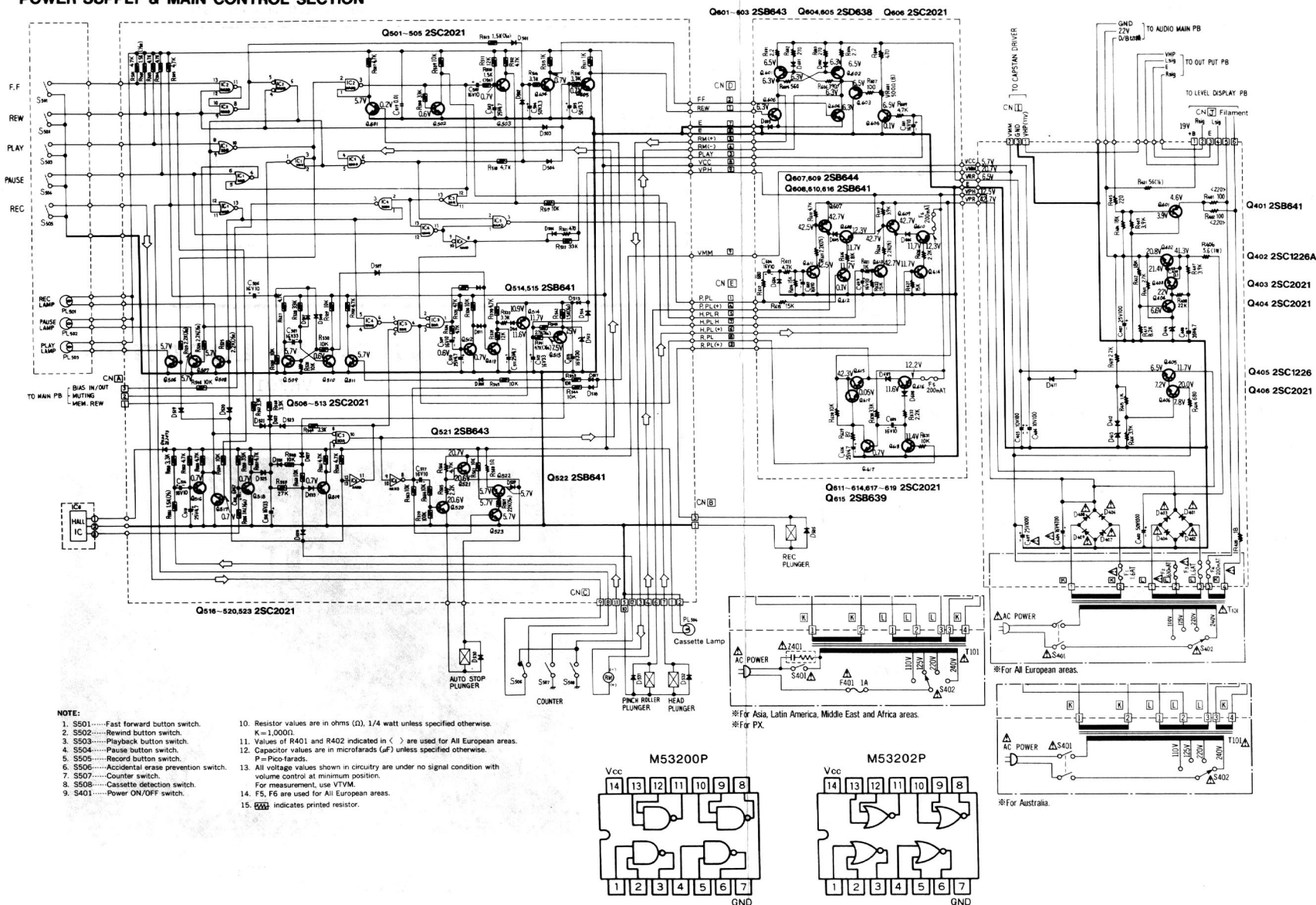


Fig. 24

# SCHEMATIC DIAGRAM POWER SUPPLY & MAIN CONTROL SECTION



NOTE: RESISTORS		CAPACITORS	
ERD	Carbon	ECG	Ceramic
ERG	Metal-oxide	ECK	Ceramic
ERO	Metal-film	ECC	Ceramic
ERX	Metal-film	ECF	Ceramic
ERQ	Fuse type metallic	EQM	Polyester
ERC	Solid	ECQ	Polyester
ERF	Cement	ECQF	Polypropylene
		ECE	Electrolytic
		ECE	Non polar electrolytic
		ECQS	Polystyrene
		ECS	Tantalum

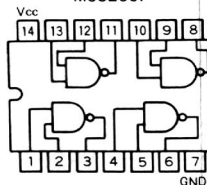
Ref. No.	Part No.	Ref. No.	Part No.
<b>RESISTORS</b>			
R1, 2	ERD25TJ682	R132	ERD25TJ472
R3, 4	ERD25TJ100	R133	ERD25TJ821
R5, 6	ERD25TJ104	R134	ERD25TJ332
R7, 8	ERD25TJ563	R135, 136, 137, 138	ERD25TJ472
R9, 10	ERD25TJ101	R201, 202	ERD25TJ154
R11, 12	ERD25TJ224	R203, 204	ERD25TJ104
R13, 14	ERD25TJ471	R205, 206	ERD25TJ273
R15, 16	ERD25TJ224	R207, 208	ERD25TJ223
R19, 20	ERD25TJ103	R209, 210	ERD25TJ154
R21, 22	ERD25TJ273	R211, 212	ERD25TJ272
R23, 24	ERD25TJ103	R213, 214	ERD25TJ222
R25, 26	ERD25TJ181	R215, 216	ERD25TJ274
R27, 28	ERD25TJ273	R217, 218	ERD25TJ473
R29	ERD25TJ562	R219, 220	ERD25TJ332
R31, 32	ERD25TJ124	R221, 222	ERD25TJ392
R33, 34	ERD25TJ562	R223, 224	ERD25TJ102
R35, 36	ERD25TJ563	R225, 226	ERD25TJ185
R39, 40	ERD25TJ123	R227, 228	ERD25TJ105
R41, 42	ERD25TJ182	R229, 230	ERD25TJ153
R43, 44	ERD25TJ472	R231, 232	ERD25TJ101
R45, 46	ERD25TJ562	R233, 234	ERD25TJ472
R47, 48	ERD25TJ224	R235, 236	ERD25TJ103
R49, 50	ERD25TJ333	R237, 238, 239, 240	ERD25TJ822
R51, 52	ERD25TJ101	R241, 242	ERD25TJ333
R53, 54	ERD25TJ683	R243, 244	ERD25TJ154
R55, 56	ERD25TJ102	R245, 246	ERD25TJ333
R57, 58	ERD25TJ101	R247, 248	ERD25TJ272
R59, 60	ERD25TJ104	R249, 250	ERD25TJ102
R61, 62	ERD25TJ102	R251, 252	ERD25TJ560
R63, 64	ERD25TJ104	R253, 254	ERD25TJ820
R65, 66	ERD25TJ562	R255, 256	ERD25TJ153
R67, 68	ERD25TJ471	R257, 258	ERD25TJ274
R69, 70	ERD25TJ103	R259, 260	ERD25TJ224
R71, 72	ERD25TJ224	R261, 262	ERD25TJ822
R73, 74	ERD25TJ473	R263, 264	ERD25TJ222
R75, 76	ERD25TJ563	R265	ERD25TJ274
R77, 78	ERD25TJ562	R301, 302	ERD25TJ223
R79, 80	ERD25TJ153	R303, 304	ERD25TJ333
R81, 82	ERD25TJ332	R305, 306	ERD25TJ473
R83, 84	ERD25TJ333	R307, 308	ERD25TJ154
R85, 86	ERD25TJ332	R309, 310	ERD25TJ223
R87, 88	ERD25TJ103	R311, 312	ERD25TJ102
R89, 90	ERD25TJ822	R313, 314	ERD25TJ221
R91, 92, 93, 94	ERD25TJ273	R315, 316	ERD25TJ823
R95, 96	ERD25TJ123	R318	ERD25TJ822
R97, 98	ERD25TJ563	R320	ERD25TJ681
R99, 100	ERD25TJ473		
R101, 102	ERD25TJ392		
R103, 104	ERD25TJ224		
R105, 106	ERD25TJ333		
R107	ERD25TJ152		
R108	ERD25TJ821		
R109, 110	ERD25TJ562		
R111, 112	ERD25TJ821		
R113, 114	ERD25TJ220		
R115, 116	ERD25TJ821		
R117, 118	ERD25TJ222		
R119, 120	ERD25TJ472		
R121, 122	ERD25TJ104		
R123, 124	ERD25TJ152		
R125	ERD25TJ682		
R126	ERD25TJ473		
R128	ERD25TJ822		
R130	ERD25TJ183		
R131	ERD25TJ222		

## NOTE:

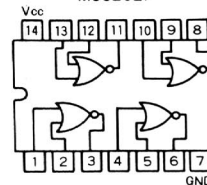
- S501.....Fast forward button switch.
- S502.....Rewind button switch.
- S503.....Play button switch.
- S504.....Pause button switch.
- S505.....Record button switch.
- S506.....Accidental erase prevention switch.
- S507.....Counter switch.
- S508.....Cassette detection switch.
- S401.....Power ON/OFF switch.
- Resistor values are in ohms ( $\Omega$ ), 1/4 watt unless specified otherwise.
- Values of R401 and R402 indicated in ( ) are used for All European areas.
- Capacitor values are in microfarads ( $\mu$ F) unless specified otherwise.
- P=Pico-farads.
- All voltage values shown in circuitry are under no signal condition with volume control at minimum position.
- For measurement, use VTVM.
- F5, F6 are used for All European areas.
- $\square$  indicates printed resistor.

\*For Asia, Latin America, Middle East and Africa areas.  
\*F or FX.

M53200P



M53202P



# RS-M65 RS-M65

NOTE: Δ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.	Part No.	Ref. No.	Part No.
R321, 322	ERD25J823	R609, 610	ERD25J472
R323, 324	ERD25J330	R611	ERD25J222
R325, 326	ERD25J330	R612	ERD25J681
R327	ERD25J222	R613	ERD25J472
R329, 330	ERD25J472	R614, 615	ERD25J153
R331	ERD25J102	R616	ERD25J182
R332, 333, 334	ERD25J110	R619	ERD25J392
R335, 336	ERD25J101	R620	ERD25J222
R401, 402	ERD25J101	R621	ERD25J102
For Asia, Latin America, Middle East, Africa areas, Australia and PK.	ERD25J101	R622	ERD25J153
ERD25J221	ERD25J101	R628	ERD25J103
R403	ERD25J392	R629	ERD25J820
R404	ERD25J183	R630	ERD25J333
R405	ERD25J221	R631	ERD25J103
R406	ERD25J392	R632	ERD25J222
R407	ERD25J392	R701	ERD25J183
R408	ERD25J223	R702	ERD25J153
R411	ERD25J272	R703	ERD25J822
R412	ERD25J183	R704	ERD25J392
R413	ERD25J822	R705	ERD25K8202
R414, 415	ERD25J681	R706	ERD25J104
ERD25J392	ERD25J681	R707	ERD25J103
R416	ERD25J183	R708	ERD25J273
R417	ERD25J222	R709	ERD25J471
R418	ERD25J183	R710	ERD25J102
R419	ERD25J222	R711	ERD25J183
R420	ERD25J183	R712, 713	ERD25J270
R421	ERD25J183	R714, 715, 716, 717	ERD25J471
R423, 424	ERD25J183	R718	ERD25J332
R436	ERD25J183	R719	ERD25J271
R521	ERD25J183	R720, 721	ERD25J183
R531	ERD25J103	R722	ERD25J153
R533	ERD25J103	R723, 724	ERD25J222
R565	ERD25J222	R725	ERD25J102
R566	ERD25J472	R726	ERD25J183
R568	ERD25J183	R727	ERD25J332
R601	ERD25J183		
R602, 603	ERD25J183		
R604	ERD25J271		
R605	ERD25J272		
R606	ERD25J561		
R607	ERD25J101		
R608	ERD25J1471		

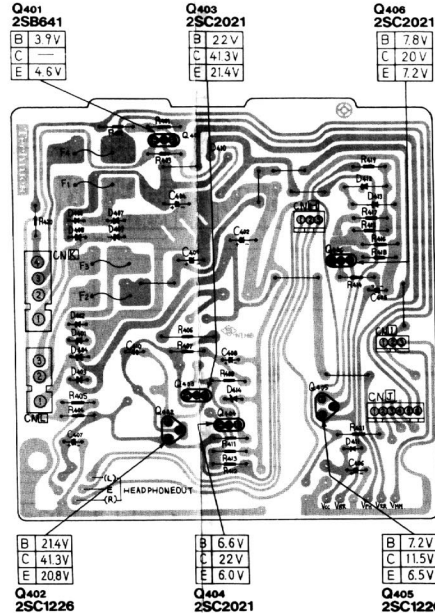
Ref. No.	Part No.	Part Name & Description
<b>TRANSFORMERS</b>		
T1	QLB0185	Bias Oscillator Transformer
T101	QLP445EMX	Power Transformer
For United Kingdom, Asia, Latin America, Middle East, Africa areas, Australia and PK.		
QLP445EMX	QLP445EMX	
For All European areas except United Kingdom.		
<b>COILS</b>		
L1, 2	QLQV1032W	Coil
L3, 4	QLQX2421Y	Coil
L5	QLM925X	MPX Filter Coil
<b>SWITCHES</b>		
S1, 2	QSS1204	Record/Playback Select Switch
S3	QST4221	Lever Switch
S4, 5, 6	QST4311	Lever Switch
S7	EVQPAR11K	Key Board Switch
S401	QSW1206A	Power Switch
For Asia, Latin America, Middle East, Africa areas and PK.		
QSW2214A	QSW2214A	
For All European areas and Australia.		
S402	QSR1407H	AC Power Voltage Select switch
<b>PILOT LAMPS</b>		
S501, 502, 503, 504, 505	QSWA01A	Switch
S506	QSM0067	Micro Switch
S507	QSM0238	Counter Switch
S508	QSM0238	Leaf Switch
PL501, 502, 503	XAMQ345300W	Pilot Lamp
PL504	XAMQ415500	Pilot Lamp

Ref. No.	Part No.	Ref. No.	Part No.
VR301, 302, 303, 304	EVNKA0A00B54	C311, 312	ECQM05103KZ
VR601	EVNKA0A00B54	C313, 314	ECEA1HS100
VR701	EVNKA0A00B54	C315	ECEA1AS470
VR702	EVNKA0A00B13	C316	ECEA1AS471
<b>CAPACITORS</b>			
C1, 2	ECOD1H331K	C401	ECEA1HS471
C3, 4	EQQS1471JZ	C402	ECEA1HS102
C5, 6	ECOD1H181K	C403	ECEA1CS102
C7, 8	ECEA25M4R7	C404	ECEA1AS472
C10	ECEA1HS100	C405, 406	ECEA1AS101
C11, 12	ECQM05102KZ	C407	ECEA1ES101
C13, 14	ECQM0523JZ	C408	ECEA1HS470
C15, 16	ECQM0523JZ	C409	ECEA1HS102
C17, 18	ECOD1H471K8	C410	ECQM05104M2
C19, 20	ECOD1H470K	C502	ECEA1HS100
C21, 22	ECEA1AS470	C503	ECEA25Z4R7
C23, 24	ECOD1H471K8	C504, 505	ECEA5023R3
C25, 26	ECEA1HS100	C506	ECEA16N10
C27, 28	ECEA50M4R7	C507	ECEA1CS330
C29, 30	ECQM05123KZ	C509	ECEA1HS100
C31, 32	ECEA1ES470	C510, 511	ECEA50M4R7
C33, 34	ECEA50M4R7	C512	ECEA1CS330
C35, 36	ECEA50Z8R3	C513	ECEA1CS331
C37, 38	ECOD1H220K	C514	ECEA1HS100
C39, 40	ECEA1ES101	C515	ECEA1AS470
C41, 42	ECEA50Z8R3	C516	ECEA1CS330
C43, 44	ECOD1H121K	C517	ECEA1HS100
C45, 46	ECQM05122KZ	C518	ECEA25Z4R7
C47, 48	ECEA50Z8R3	C519	ECOD1H103ZF
C49, 50	ECEA1HS100	C601, 602, 603, 604, 605	ECEA1HS100
C51, 52	ECEA50Z8R3	C606	ECEA25Z4R7
C54	ECEA1ES470	C701	ECQM05393KZ
C55, 56	ECEA25Z4R7	C702	ECQM05683KZ
C57, 58	ECQM05393JZ	C703	ECQM05104KZ
C59, 60	ECQM05562JZ	C704	ECOD1H471K8
C61, 62	ECQM05683KZ	C705	ECQM05123KZ
C63, 64	ECQM05223KZ	C706	ECQM05182KZ
C65, 66	ECQM05333KZ	C707	ECQM05332KZ
C67, 68	ECQM05103KZ	C708	EQQS1681JZ
C69, 70	ECQM05332KZ	C709	ECQM05223KZ
C71, 72	ECOD1H471K8	C710	ECEA1ES470
C73, 74	ECOD1H470K	C711	ECQM05473KZ
C75	EQCP6332KZ	C712	ECQM05562KZ
C76	ECQM05104M2	C713	ECQM05473KZ
C77	ECOD1H221K	C714	ECEA50Z4R7
C78	EQQS1561JZ	C715	ECQM05123KZ
C79	ECEA25Z4R7	C716	ECEA50Z8R3
C81, 82	ECEA50Z1	C717, 718	ECEA50N1
C83, 84	ECOD1H102K8	C719	ECEA1ES101
C85, 86	ECQM05682KZ	C720	ECOD1H152K8
C87, 88	ECOD1H102K8		
C201, 202	ECEA25Z4R7		

Ref. No.	Part No.	Part Name & Description
<b>COMBINATION PARTS</b>		
C203, 204	ECEA1HS100	
C205, 206	ECEA25Z4R7	
C207, 208	ECQM05562JZ	
C209, 210	ECQM05273JZ	
C211, 212	ECQM05472JZ	
C213, 214	ECEA1HS100	
C215, 216	ECEA50M4R7	
C217, 218	ECEA1ES470	
C219, 220	ECEA50Z8R3	
C221, 222	ECEA1HS100	
C223, 224	ECOD1H270K	
C225, 226	ECEA50Z8R3	
C227, 228	ECEA1HS100	
C229, 230, 231, 232	ECEA50Z8R3	
C301, 302	ECEA1HS100	
C303, 304	ECEA1AS221	
C305, 306	ECEA1HS100	
C307, 308	ECQM05333M2	
C309, 310	ECEA1HS100	
<b>TRANSISTORS</b>		
Q1, 2	2SA721	
Q3, 4, 5, 6	2SC1327	
Q7, 8	2SC945	
Q9, 10	2SC945	
Q13, 14, 15, 16, 17, 18, 19, 20	2SC1383	
Q23, 24	2SC1383	
Q25	2SC945	
For Asia, Latin America, Middle East, Africa areas, Australia and PK.		
Q201, 202, 203, 204	2SC1383	
Q205, 206	2SK30AD	
Q207, 208	2SC945	
Q209, 210	2SA564	
Q211, 212, 301, 302	2SC945	
Q303, 304	2SC1383	
<b>DIODES</b>		
D1	MA1051	
D2	1S2473	
D201, 202	0A90	
D203, 204	205, 206	
D207, 208	0A90	
D209, 210	1S2473	
D301, 302, 303, 304	0A90	
D306	MA1051	
D401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411	Δ SM102	
D412	MA1051	
D413	MA1082	
D414	MA1062	
D501, 502, 503, 504	1S2473	
D505	SM102	
D506, 507, 508, 509, 510, 511	1S2473	
D512	MA1075	
D513, 514	SM102	

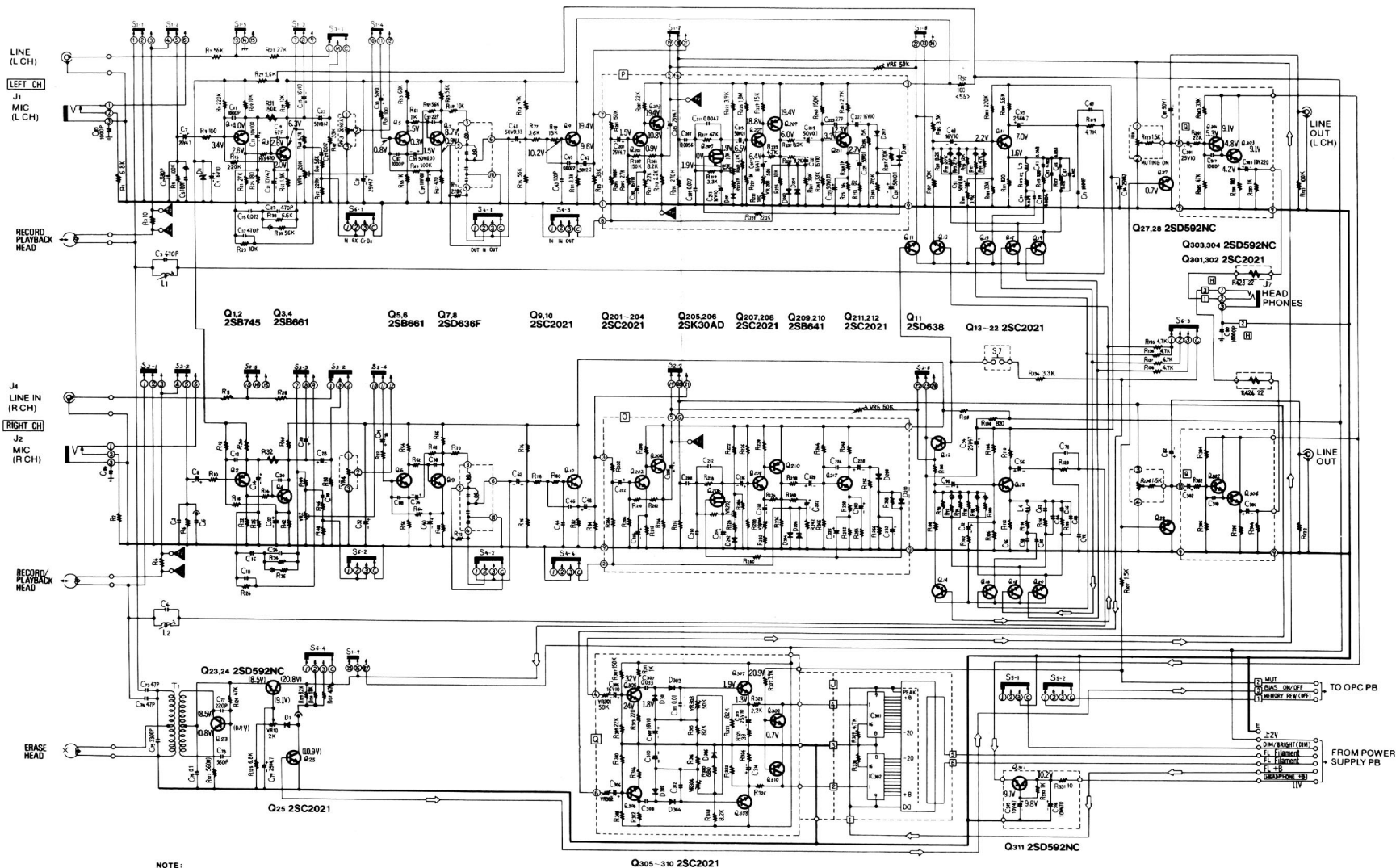
Ref. No.	Part No.	Ref. No.	Part No.
Q305, 306, 307, 308, 309, 310	2SC945	D515, 516	MA121
Q311	2SC1383	D517, 518	1S2473
Q401	2SA564	D519, 520	0A90
Q402	2SC1226	D521, 522, 523, 524, 525, 526	
Q403, 404	2SC945	D527, 528	1S2473
Q405	2SC1226	D529, 530, 531, 532	SM102
Q406, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513	2SC945	D533, 601, 602	1S2473
Q514, 515	2SA719	D603	SM102
Q516, 517, 518, 519, 520	2SC945	D604	1S2473
Q521	2SA719	D605, 606	SM102
Q522	2SA719	D608	1S2473
Q523	2SC945	D609	SM102
Q601, 602, 603, 604, 605	2SA719	D701	MA150
Q606, 605	2SC1317	D702	MA1062
Q607	2SA720		
Q608	2SA719		
Q609	2SA720		
Q610	2SA885		
For All European areas.			
Q615	2SC1318		
Q616	2SC1318		
Q617, 618, 619, 701	2SC945		
Q702, 703, 704, 705, 706, 707	2SC1317		
Q708, 709, 710, 711	2SC945		
Q712, 713, 714, 715	2SC1846		
Q716, 717, 718	2SC945		
Q719	2SC1846		
Q720, 721	2SC945		

## CIRCUIT BOARD POWER SUPPLY CIRCUIT BOARD



# SCHEMATIC DIAGRAM

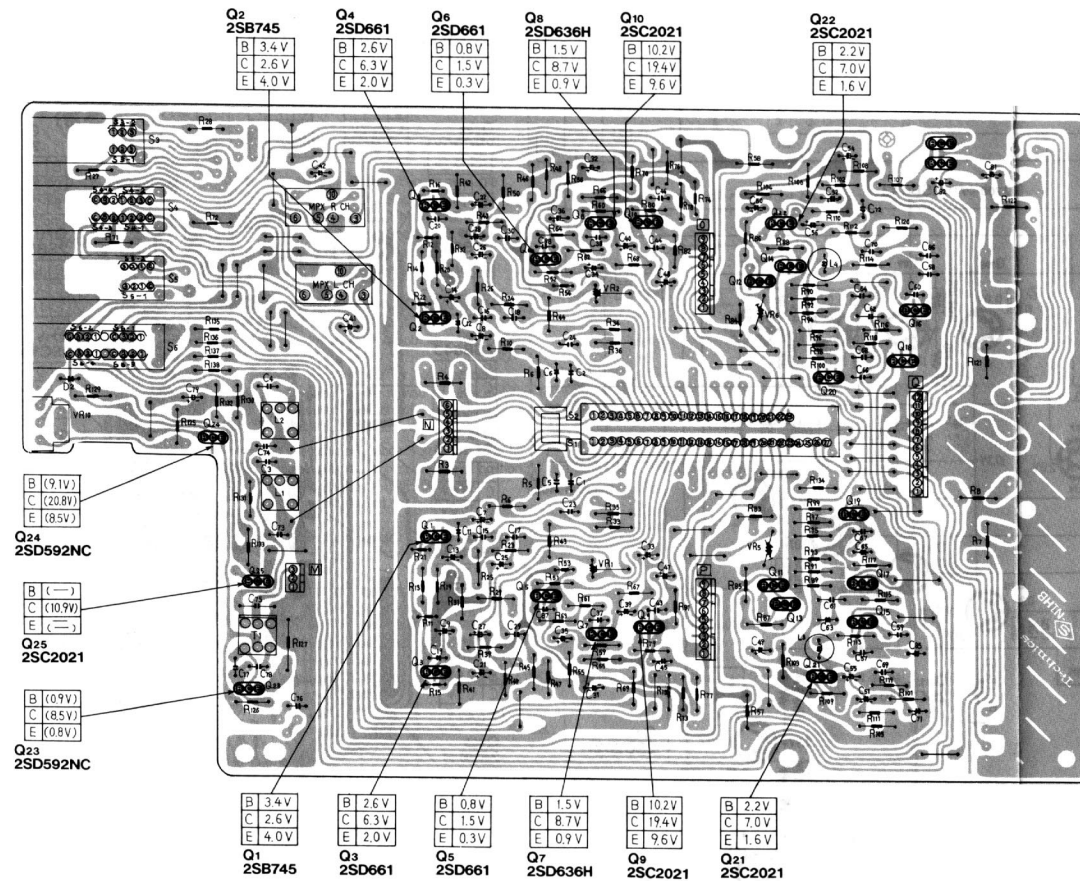
## MAIN AMP SECTION



## NOTE:

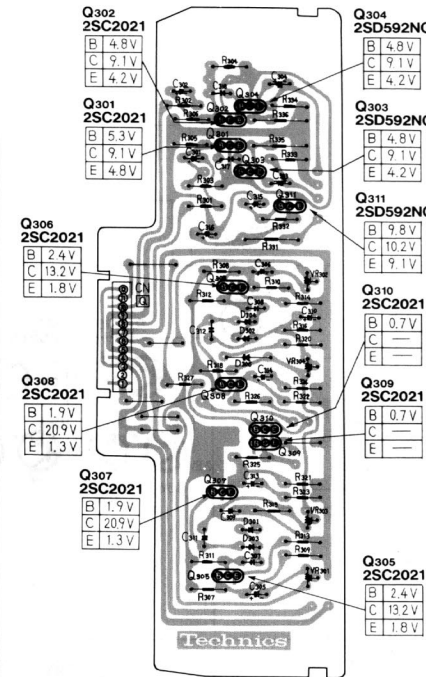
- S1-1~S1-8 ..... Record/playback select switch L-CH (shown in playback position).
- S2-1~S2-9 ..... Record/playback select switch R-CH (shown in playback position).
- S3-1, S3-2 ..... Input select switch (L - LINE IN, M - MIC).
- S4-1~S4-4 ..... Dolby NR switch (shown in "OUT" position).
  - Filter-OUT/IN, 2 - Filter-IN/IN, 3 - Filter-OUT/OUT.
- S5-1, S5-2 ..... Memory rewind switch/meter brightness select switch (shown in memory rewind OFF/meter brightness DIM position).
  - Memory rewind OFF/DIM, 2 - Memory rewind ON/DIM, 3 - Memory rewind ON/BRIGHT.
- S6-1, S6-2 ..... Tape select switch (shown in "Normal" position).
  - Normal, 2 - Fe-Cr, 3 - CrO2.
- S7 ..... Muting switch for record and playback.
- VR1, 2 ..... Playback level adjustment VR.
- VR3, 4 ..... Input level control.
- VR5, 6 ..... Recording level adjustment VR.
- VR7, 8 ..... Output level control.
- VR10 ..... Bias control adjustment VR.
- VR301, 302 ..... Fluorescent meter adjustment VR (for 0dB).
- VR303, 304 ..... Fluorescent meter adjustment VR (for -20dB).
- L1, 2 ..... Bias leakage adjustment coil.
- L3, 4 ..... Recording equalizer coil.
- Resistor values are in ohms ( $\Omega$ ), 1/4 watt unless specified otherwise. K=1,000.
- Values of R57 and R58 indicated in ( ) are used for All European areas.
- Capacitor values are in microfarads ( $\mu$ F) unless specified otherwise. P = Pico farads.
- All voltage values shown in circuitry are under no signal condition with volume control at minimum position.
- For measurement, use VTVM.
- $\overline{R57}$  indicates printed resistor.

# CIRCUIT BOARD MAIN AMP CIRCUIT BOARD

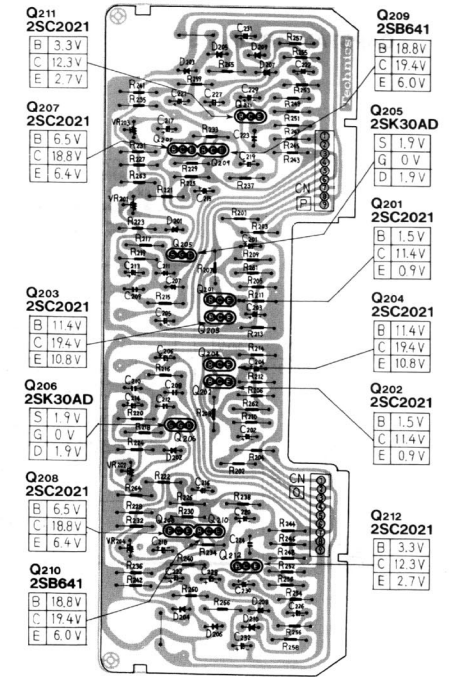


**NOTE:**  
The circuit shown in red on the conductor is B circuit.  
Values indicated in   are DC voltage between the chassis and electrical parts.

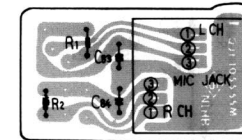
## METER OUTPUT CIRCUIT BOARD



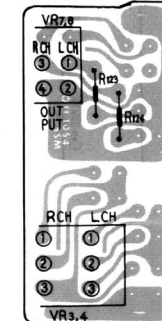
## DOLBY CIRCUIT BOARD



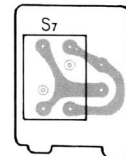
## MIC JACK CIRCUIT BOARD



## VR CIRCUIT BOARD

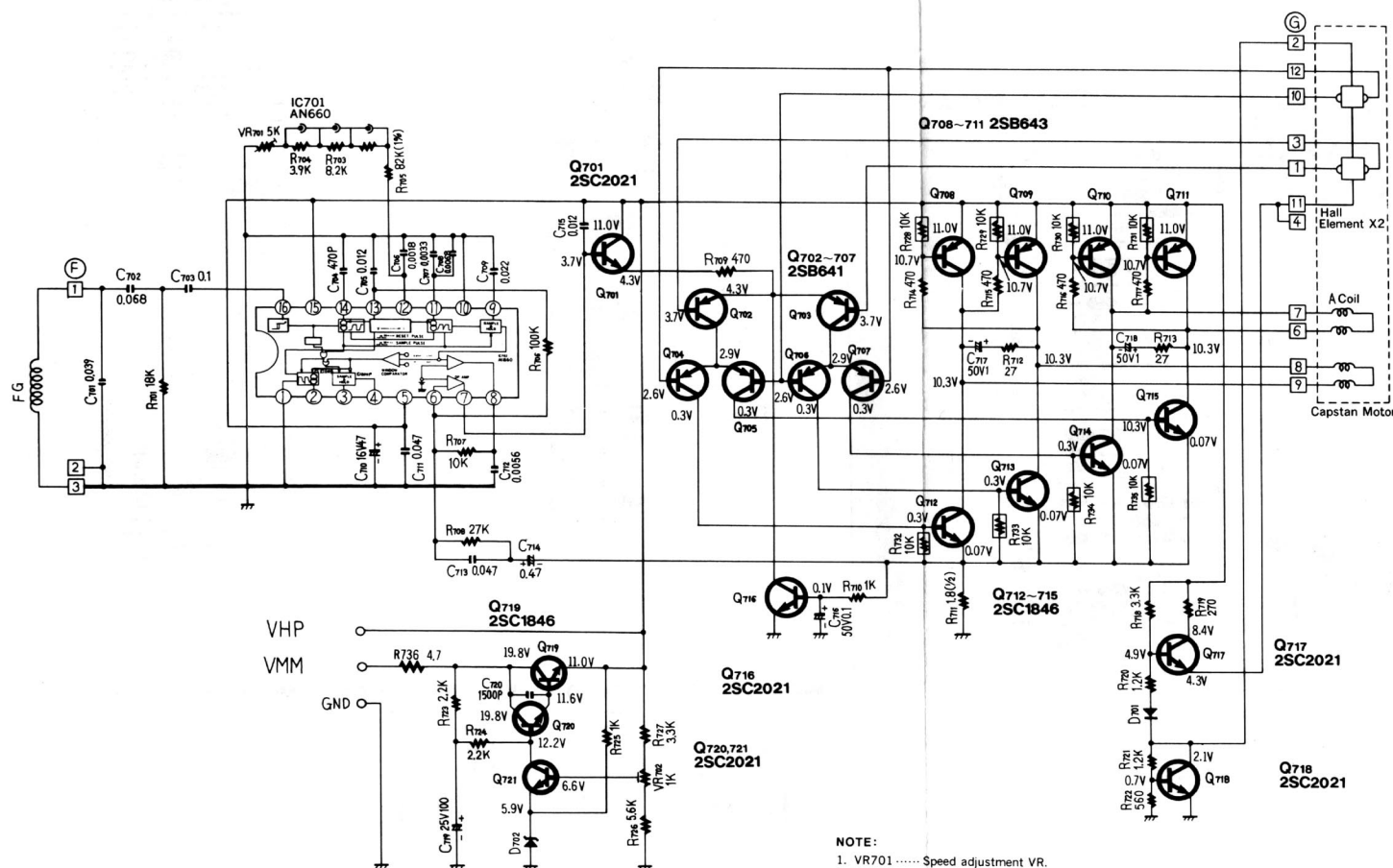


## MUTING CIRCUIT BOARD



## SCHEMATIC DIAGRAM

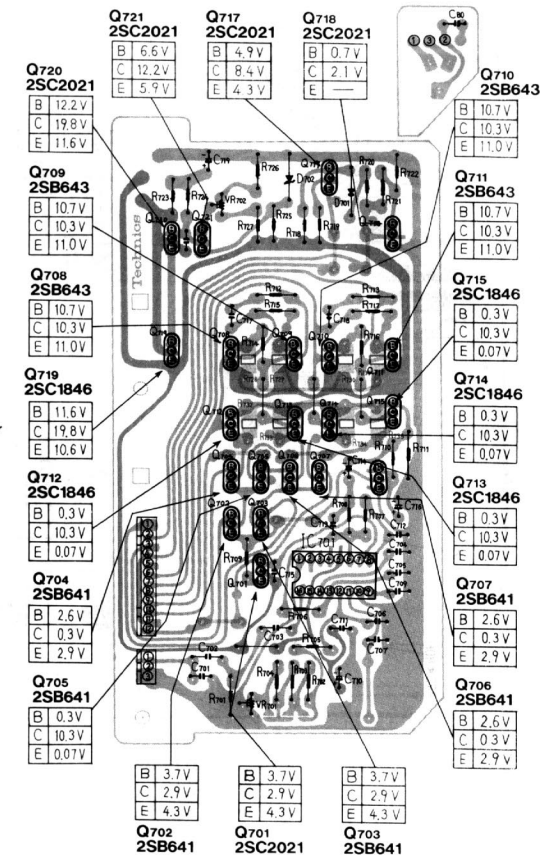
## CAPSTAN DRIVING SECTION



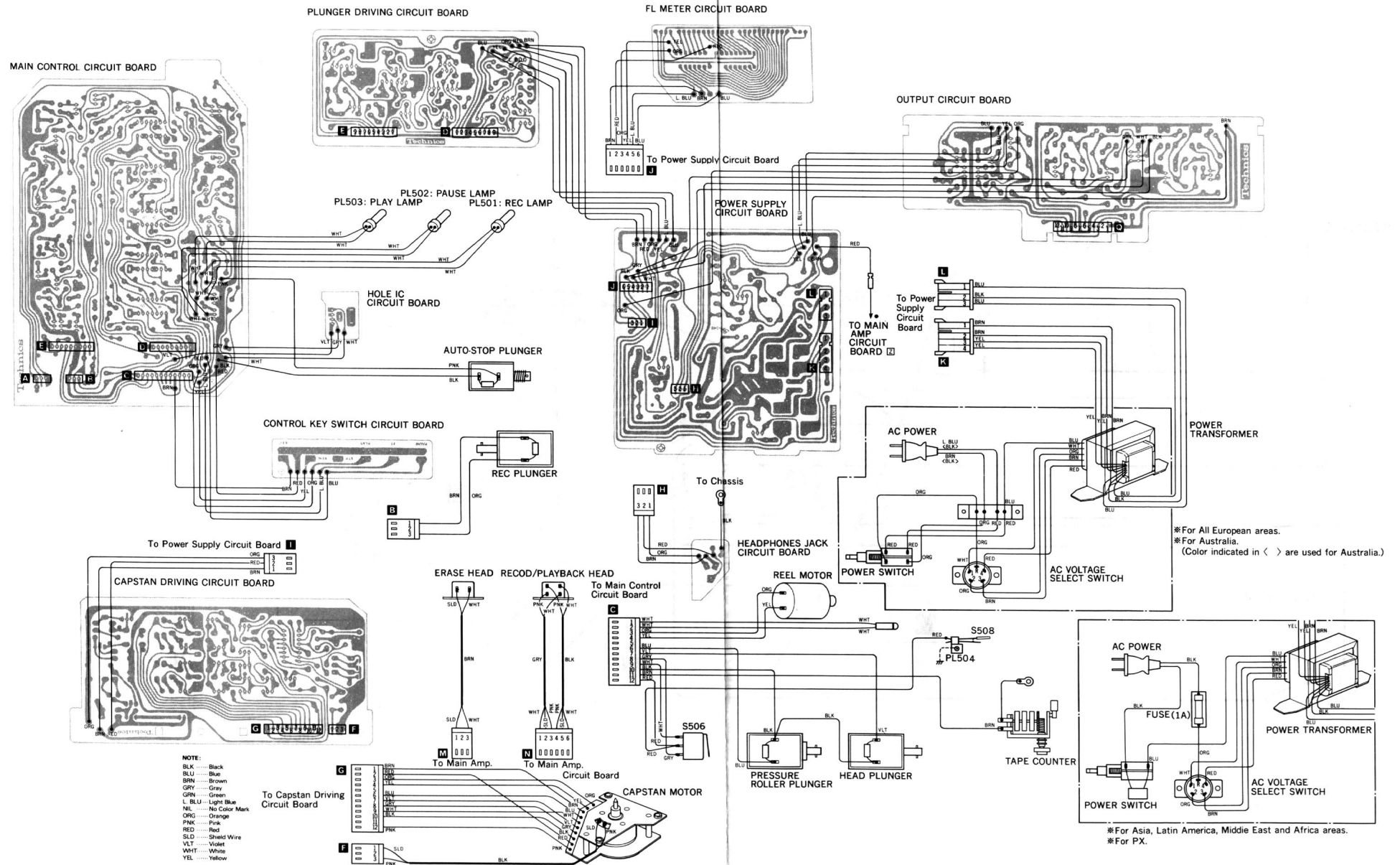
## NOTE:

1. VR701 ..... Speed adjustment VR.
2. VR702 ..... Standard DC power voltage adjustment VR.
3. Resistor values are in ohms ( $\Omega$ ), 1/4 watt unless specified otherwise.  
K = 1,000 $\Omega$ .
4. Capacitor values are in microfarads ( $\mu$ F) unless specified otherwise.  
P = Pico-farads.
5. All voltage values shown in circuitry under no signal condition with volume control at minimum position.  
For measurement, use VTVM.
6. indicates printed resistor.

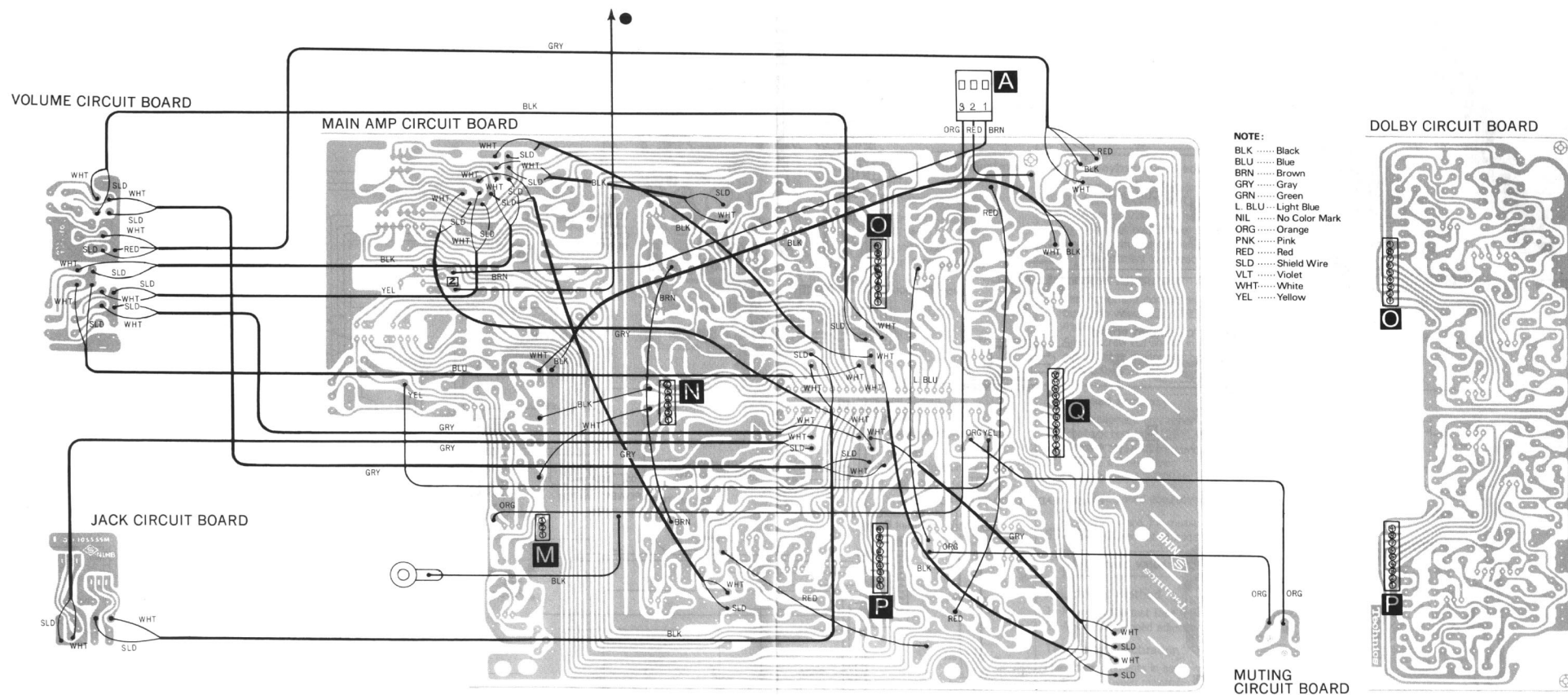
## CAPSTAN DRIVING CIRCUIT BOARD



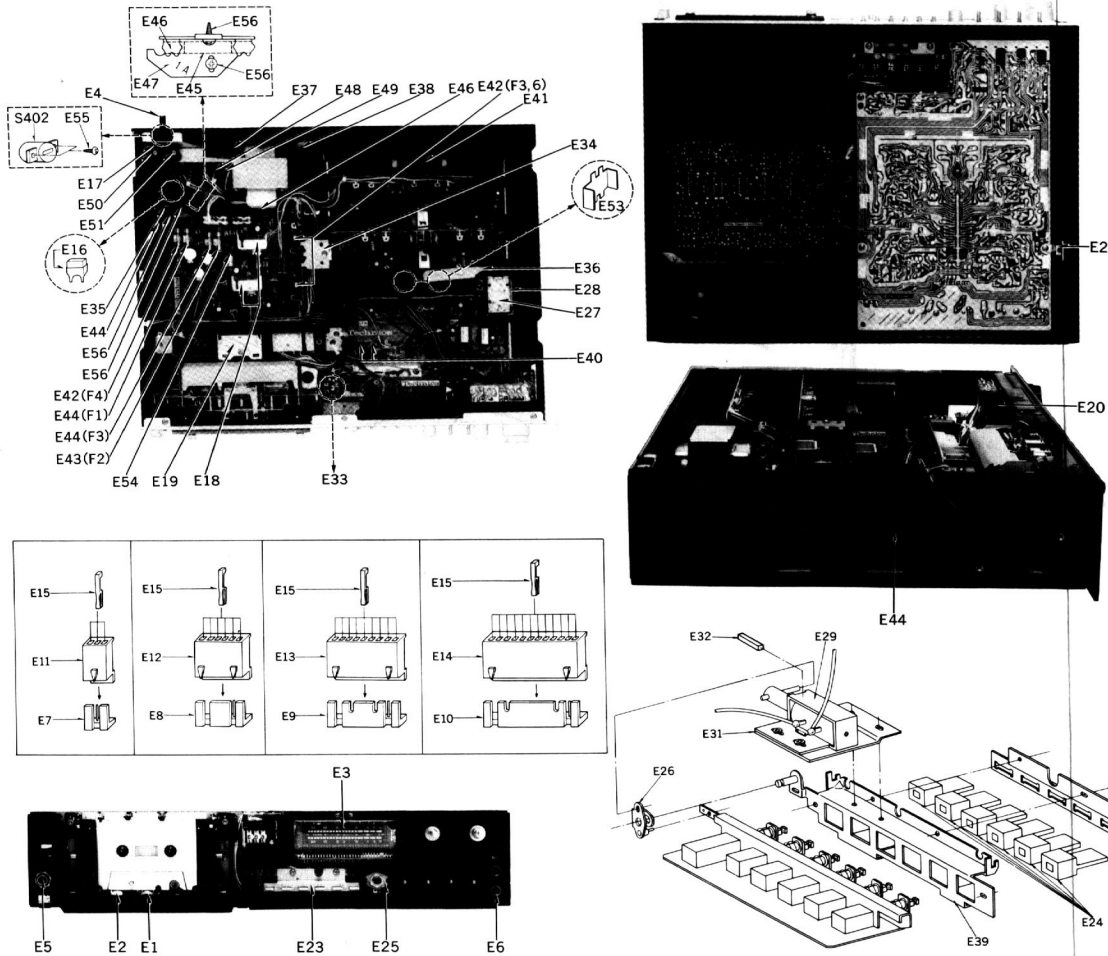
# WIRING CONNECTION DIAGRAM



# WIRING CONNECTION DIAGRAM



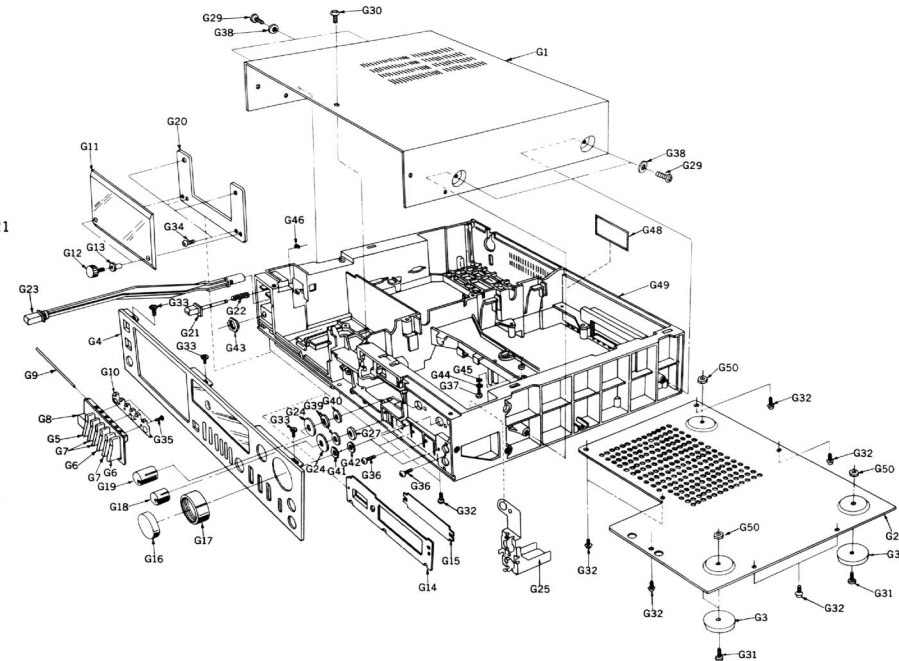
## ELECTRICAL PARTS LOCATION



NOTE: Δ indicates that only parts specified by the manufacturer be used for safety.

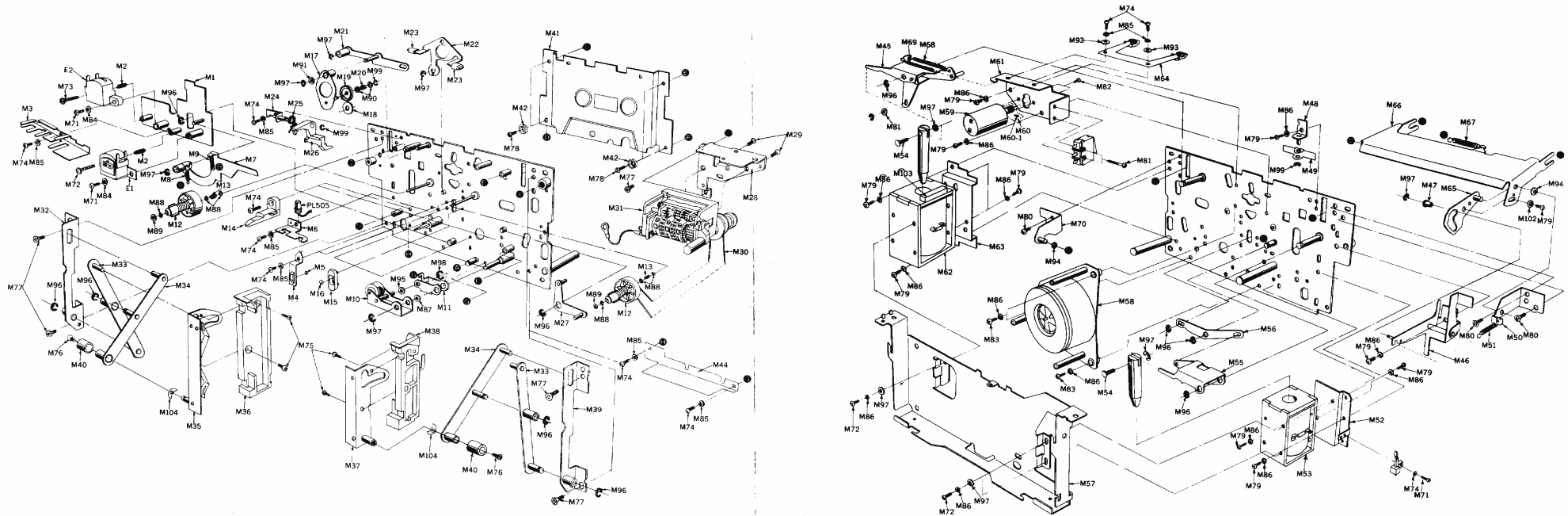
Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
<b>ELECTRICAL PARTS</b>								
E1	QWY41182A	Record/Playback Head	E28	QMF2021	Plunger Holding Plate	E46	QTF1033	Fuse Holder (1A)
E2	QWY21222B	Erase Head	E29	QME0150	Auto-Stop Plunger	Δ For Asia, Latin America, Middle East, Africa areas and PX.	Δ For Asia, Latin America, Middle East, Africa areas and PX.	
E3	QSL5002RF	Fluorescent Level Meter	E31	QMA3589	Plunger Holding Angle	E47	QMA3122	Fuse Angle
E4	Δ QFC1203M	AC Power Cord	E32	QBG1634	Cushion	Δ For Asia, Latin America, Middle East, Africa areas and PX.	Δ For Asia, Latin America, Middle East, Africa areas and PX.	
Δ QFC1205M			E33	QMA3579	Hall Device Angle	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
Δ QFC1204M			E34	QMA3580	P.B. Angle	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
Δ QFC1208M			E35	QMA3578	Power Angle	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
Δ QJA0249C		Headphones Jack	E36	QXL1244	Record/Playback Lever	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
Δ QJA0444H		Microphone Jack	E37	QMA3577	Trans Angle	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
Δ QJP19221N		3 Pin Plug	E38	QEQ1472	Shield Plate	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
Δ QJP19227N		6 Pin Plug	E39	QXA0737	Switch Angle	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
Δ QJP19237N		9 Pin Plug	E40	QJT1067	Check Pin	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
Δ QJP19247N		12 Pin Plug	E41	QJEJ0025	Jack Board	Δ For All European areas and Australia.	Δ For All European areas and Australia.	
E11	QJS19217N	3 Pin Socket	E42	Δ XBA0008	Mini Fuse 1, 3 (1.6AT)	E43	Δ XBA0008	Mini Fuse 2 (530mAAT)
E12	QJS19227N	6 Pin Socket	E43	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E44	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
E13	QJS19237N	9 Pin Socket	E44	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E45	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E45	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E46	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E46	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E47	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E47	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E48	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E48	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E49	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E49	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E50	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E50	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E51	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E51	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E52	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E52	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E53	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E53	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E54	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E54	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E55	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E55	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)	E56	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)
			E56	Δ XBA0010	Mini Fuse 1, 3 (1.6AT)			

## CABINET PARTS



Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
<b>CABINET PARTS</b>								
G1	QGC1126K	Case Cover	G20	QK2927K	Cassette Lid Holding Plate	G48	QGS2641	Main Name Plate
G2	QGC1126K	"Black Type"	G21	QK2927	"Silver Type"	Δ For PX	QGS2666	"
G3	QGC1126K	"Silver Type"	G22	QGD1504K	Eject Button	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G4	QK1076	Bottom Cover	G23	QGD1504	"Black Type"	Δ For United Kingdom and Australia.	Δ For United Kingdom and Australia.	
G5	QYP0858	Rubber Foot	G24	QXB0630	"Silver Type"	Δ For All European areas except United Kingdom.	Δ For All European areas except United Kingdom.	
G6	QYP0846	Front Panel Assembly	G25	QXB0630	"Black Type"	Δ For All European areas except United Kingdom.	Δ For All European areas except United Kingdom.	
G7	QXB0528	"Silver Type"	G26	QXB0630	"Silver Type"	Δ For All European areas except United Kingdom.	Δ For All European areas except United Kingdom.	
G8	QXB0529	Control Button (REC)	G27	QXB0630	"Black Type"	Δ For All European areas except United Kingdom.	Δ For All European areas except United Kingdom.	
G9	QGD1416	Control Button (PLAY, PAUSE)	G28	QXB0630	"Silver Type"	Δ For All European areas except United Kingdom.	Δ For All European areas except United Kingdom.	
G10	QGD1503	Control Button (FF, REW, STOP)	G29	QXB0630	"Black Type"	Δ For All European areas except United Kingdom.	Δ For All European areas except United Kingdom.	
G11	QMN1531	Button Shaft	G30	QXB0630	"Silver Type"	Δ For All European areas except United Kingdom.	Δ For All European areas except United Kingdom.	
G12	QBP1831	Button Spring	G31	YXA4-BJ10K	Screw ±4×10	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G13	QK2922	Cassette Lid	G32	XSS3+8BV5	Screw ±3×8	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G14	QHQ1272	Cassette Lid Holder	G33	XTN4-10B	Tapping Screw ±4×10	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G15	QHQ1280	"Black Type"	G34	XTN3-10B	Tapping Screw ±3×10	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G16	QHQ1280	"Silver Type"	G35	XTN2-5B	Tapping Screw ±2×5	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G17	QBG1551	Cushion Rubber	G36	XSN3+6S	Screw ±3×6	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G18	QKJ0246	Meter Cover-A	G37	XSN3+8S	Screw ±3×8	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G19	QKJ0313	"Black Type"	G38	XWA48	Spring Washer 4φ	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G20	QKJ0313	"Silver Type"	G39	QW1004	Nut	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G21	QKJ0313	"Black Type"	G40	QW1004	Washer	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G22	QKJ0313	"Silver Type"	G41	QW1004	Nut	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G23	QKJ0313	"Black Type"	G42	QW1004	Washer	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G24	QKJ0313	"Silver Type"	G43	QW1004	Nut	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G25	QKJ0313	"Black Type"	G44	QW1004	Washer	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G26	QKJ0313	"Silver Type"	G45	QW1004	Nut	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G27	QKJ0313	"Black Type"	G46	QW1004	Washer	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G28	QKJ0313	"Silver Type"	G47	QW1004	Nut	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G29	QKJ0313	"Black Type"	G48	QW1004	Washer	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G30	QKJ0313	"Silver Type"	G49	QW1004	Nut	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G31	QKJ0313	"Black Type"	G50	QW1004	Washer	Δ For Asia, Latin America, Middle East and Africa areas.	Δ For Asia, Latin America, Middle East and Africa areas.	
G32	QKJ0313	"Silver Type"						
G33	QKJ0313	"Black Type"						
G34	QKJ0313	"Silver Type"						
G35	QKJ0313	"Black Type"						
G36	QKJ0313	"Silver Type"						
G37	QKJ0313	"Black Type"						
G38	QKJ0313	"Silver Type"						
G39	QKJ0313	"Black Type"						
G40	QKJ0313	"Silver Type"						
G41	QKJ0313	"Black Type"						
G42	QKJ0313	"Silver Type"						
G43	QKJ0313	"Black Type"						
G44	QKJ0313	"Silver Type"						
G45	QKJ0313	"Black Type"						
G46	QKJ0313	"Silver Type"						
G47	QKJ0313	"Black Type"						
G48	QKJ0313	"Silver Type"						
G49	QKJ0313	"Black Type"						
G50	QKJ0313	"Silver Type"						

## EXPLODED VIEWS



Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
<b>MECHANICAL PARTS</b>														
M1	QXK2029	Head Base Plate Assembly	M21	QXL1164	Brake Lever Assembly	M41	QXH0277	Mechanism Cover	M61	QMA3313	Motor Angle	M83	XSN3+8S	Screw $\phi 3 \times 8$
M2	QBCA0008	Head Spring	M22	QML3273	Brake	M42	QML2123	Spacer-B	M62	QXK0243	Plunger	M84	XWA2	Spring Washer 2 $\phi$
M3	QTD1261	Head Wires Clamper	M23	QBG1132	Stopper Rubber	M43	QBP1135	Spring Washer	M63	QMA3312	Plunger Angle-R	M85	XWA26	Spring Washer 2.6 $\phi$
M4	QBP1733	Steel Ball Holder-A	M24	QXA0714	Detection Angle Assembly	M44	QTS1451	Mechanism Shield Plate	M64	QXH0276	Cassette Holding Cushion	M86	XWA3	Spring Washer 3 $\phi$
M5	QDK1012	Steel Ball 2.5 $\phi$	M25	QBN1573	Detection Lever Spring	M45	QXL1165	Lever-B Assembly	M65	QXL1173	Lock Lever Assembly	M87	QBW2016	Poly Washer
M6	QMA3321	Lamp Cover	M26	QML3285	Detection Lever	M46	QXL1188	Eject Lever Assembly	M66	QML3282	Connector Lever	M88	QBW2012	"
M7	QXL1168	Pressure Roller Lever Assembly	M27	QXL1172	Lever-A Assembly	M47	QDP1756	Roller	M67	QBT1553	Holder Spring-R	M89	QBW2008	"
M8	QBT1490	Eject Lever Spring	M28	QMA3588	Counter Angle	M48	QXA0713	Angle Assembly	M68	QBT1405	Lever Spring			
M9	QBT1441	Pressure Roller Spring	M29	XSS3+8S	Screw $\phi 3 \times 8$	M49	QML3284	Release Lever	M69	QBT1713	Record Spring	M90	QBW2015	"
M10	QXL1166	Pressure Roller Assembly	M30	QDB0215	Counter Belt-B	M50	QMA3314	Connector Angle	M70	QXA0702	Connector Angle-R Assembly	M91	QBW2017	"
M11	QML3267	Pressure Roller Lever-L	M31	QXA0768	Tape Counter Assembly	M51	QBT1753	Playback Lever Spring	M71	XSN2+6	Screw $\phi 2 \times 6$	M92	QBW2018	"
M12	QXD0087	Reel Table		QXA0744	"Black Type"	M52	QMA3591	Plunger Angle-L	M72	XSN3+6S	Screw $\phi 3 \times 6$	M93	XWG26	Fiber Washer
M13	QBC1272	Back Tension Spring		QXA0744	"Silver Type"	M53	QME0141	Plunger	M73	QH01230	Head Adjustment Screw	M94	QBW2019	Poly Washer
M14	QMG0054	Cassette Guide	M32	QXA0703	Angle-L Assembly	M54	QMN2095	Plunger Pin	M74	XWA28	Washer	M95	QBN1123	Fiber Washer
M15	QMH2009	Steel Ball Holder-B	M33	QXL1191	Link Lever-A Assembly	M55	QXL1171	Plunger Lever-L Assembly	M75	XSN26+4BVS	Screw $\phi 2.6 \times 4$	M96	XUC3FT	Stop Ring 3 $\phi$
M16	QDK1006	Steel Ball 3 $\phi$	M34	QXL1190	Link Lever-B Assembly	M56	QML3276	Plunger Lever	M76	XSS2+4	Screw $\phi 2 \times 4$	M97	XWG3	Fiber Washer
M17	QXL1189	Idle Lever Assembly	M35	QXA0706	Holder Angle-L Assembly	M57	QXA3591	Reinforcement Angle	M77	XSS3+4S	Screw $\phi 3 \times 4$	M98	XUC3FT	Stop Ring 5 $\phi$
M18	QBT1260	Idle Felt	M36	QMH2027	Cassette Holder-L	M58	QH01185	Captain Motor Assembly	M78	QH01185	Step Screw	M99	XUC2FT	Stop Ring 2 $\phi$
M19	QX10101	Idle Assembly	M37	QXA0705	Holder Angle-R Assembly	M59	MKCN22AE5	Reel Motor	M79	XSN3+5S	Screw $\phi 3 \times 5$	M100	XSN26+6	Screw $\phi 2.6 \times 6$
M20	QBC1308	Idle Spring	M38	QMH2028	Cassette Holder-R	M60	QXP0574	Motor Pulley Assembly	M80	XSS3+6S	Screw $\phi 3 \times 6$	M101	XWG26	Flat Washer
			M39	QXA0704	Angle-R Assembly	M60-1	XXE26D3FZ	Set Screw	M81	QBK7123	Washer	M102	XWC3	Lock Washer
			M40	QXJ0245	Spacer-A				M82	XSN2+3	Screw $\phi 2 \times 3$	M103	QBG1634	Rubber Cushion

## SPECIFICATIONS

Pressure of pressure roller	400 $\pm$ 30 gr
Takeup tension (Use cassette torque meter...QZZSRKCT)	45 $\pm$ 15 gr-cm
Wow and flutter (Test tape...QZZCWAT)	Less than 0.04% (WRMS)